There is a close association between overuse of antibiotics and emergence of resistance. Surveys worldwide point to a high prevalence of inappropriate antibiotic use both in hospital based or community based studies. Inappropriate use is common in developed as well as developing countries. Overuse of antibiotics exerts a selection pressure hence changing a largely susceptible population of organisms to a largely resistant one. Although antibiotic resistance has a fitness cost, compensatory mutations can mitigate this fitness cost.
Stewardship is the careful and responsible management of something entrusted to one's care. Antibiotic stewardship is now an important public health function as antibiotic resistance has become one of the most important clinical challenges today.
Antibiotic stewardship should be practiced at international, national and institutional levels. At the international level the World Health Organisation has played a key role in encouraging all countries to adopt national strategies to contain antibiotic resistance. A national strategy should be a multi-faceted approach which includes strengthening antibiotic resistance surveillance, developing and implementing antibiotic guidelines for practitioners, improving access to and upgrading the quality of microbiological diagnostic facilities, increasing public awareness of antibiotic resistance and controlling and regulating the use of antibiotics for both medicinal and non-medicinal purposes.
In Malaysia the Ministry of Health has established a fairly well defined administrative structure for the purpose of antibiotic stewardship. The National Infection and Antibiotic Control Committee is chaired by the Director General of Health. A National Antibiotic Resistance Surveillance System was established in 1990. The monitoring of antibiotic utilization is also undertaken and two National Medicines Use surveys has thus far been completed. Monitoring of antibiotic utilisation in the Ministry of Health state hospitals is focused on 4 major groups of compounds namely cephalosporins, carbapenems, quinolones and glycopeptides.
At the institutional level all government hospitals have antibiotic formularies and guidelines. However the effectiveness of antibiotic stewardship at an institution depends very much on the presence of "champions". In the private sector doctors can use any product so long as it is registered by the Drug Control Authority and consultants operate as independent contractors in private hospitals. Professional societies also issue practice guidelines from time to time but the effectiveness of these guidelines is questionable.
Other measures in antibiotic stewardship would be the legislative control of prescription and sales of antibiotics for medicinal use as well as non-medicinal use and the regulation of marketing and promotional activities by pharmaceutical companies.
The emergence of resistance is threatening the usefulness of antibiotics and there is an urgent need to conserve this precious resource. Antibiotic stewardship is crucial to contain resistance. A concerted effort employing a multifaceted strategy is essential at international, national and institutional levels and all stakeholders need to work together to meet this challenge.

### CS10-04 Problems with Empirical Antibiotics in Febrile Neutropenia

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Over the years, numerous well-conducted randomized controlled trials have provided much information guiding the empirical use of antibiotics in febrile antibiotics. Monotherapy with ceftazidime, cefepime, imipenem or meropenem is well supported by the data, and is in common use. At the same time, the more traditional combination of an anti-pseudomonal beta-lactam with an aminoglycoside continues to be used.
Problems with these approaches have arisen largely because of rising antibiotic resistance. Outbreaks of metallo-betalactamase (MBL)-producing organisms have occured in Haematology-Oncology units, as have outbreaks of vancomycin-resistant enterococci (VRE) and *Stenotrophonomas maltophilia*. These outbreaks have been attributed in part to the overuse of antibiotics. There are also problems associated with individual drugs, such as the purported increase in mortality associated with cefepime use, the link between piperacillin-tazobactam and false-positive galactomannan readings, and the link between ceftazidime and the extended-spectrum beta-lactamases (ESBLs).
These topics will be reviewed in the talk.

## *Concurrent Session 11 – HIV/AIDS*

### CS11-01 Molecular Epidemiological Study of HIV-1 CRF01_AE Transmission in Hong Kong

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A total of 465 HIV-1 CRF01_AE *pol* sequences were collected for phylogentic study by the Bayesian coalescent method. CRF01_AE patient population included 363 males (78.1%) and 102 females (21.9%) while 65% (314/465) were local Chinese. Major transmission routes were heterosexual contact (63%), followed by intravenous drug use (19%) and men having sex with men (MSM) (17%). From phylogenetic analysis, local CRF01_AE strains were from multiple origins with 3 separate transmission clusters identified. Cluster 1 consisted mainly of Chinese male intravenous drug users (IDU) and heterosexual. Cluster 2 and 3 included mainly local Chinese MSM and non-Chinese Asian IDUs respectively. Chinese reference isolates available from China (Fujian, Guangxi, or Liaoning) were clonally related to our transmission clusters, demonstrating the epidemiological linkage of CRF01_AE infections between Hong Kong and China. The 3 individual local transmission clusters were estimated to have initiated since late-80s and late-90s, causing subsequent epidemics in the early-2000s. This is the first comprehensive molecular epidemiological study of HIV-1 CRF01_AE in Hong Kong. It revealed MSM contact is becoming a major route of local CRF01_AE transmission in Hong Kong. Epidemiological linkage of CRF01_AE between Hong Kong and China observed in this study indicates the importance of regular molecular epidemiological surveillance for the HIV-1 epidemic in our region.

### CS11-02 Clinical Retrospective Study of Haemophilia A Patients with AIDS after Long Term HAART

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**Objcetive:** To observe and evaluate the impact of long term highly active antiretroviral therapy (HAART) in Haemophilia A patients complicated with AIDS (Haemophilia A/AIDS).
**Method:** 39 Haemophilia A/AIDS patients undergone HAART for 6 years between 1 June 2002 and 31 July 2008 were enrolled. The data of Haemophilia A/AIDS patients' consultation times (times/year), bleeding times (times/year), VIII factor transfusion times (times/year), amount of VIII factor transfusion (U/year) and VIII:C level were analyzed to evaluate haemorrhage status; grade scales were designed to measure the joint function and physical ability. Then the data of HIV virus load and $CD4^+$ cells count were also observed to evaluate the effect of HAART on immune recovery; finally, the data of complete blood cell count, hepatic panel, blood lipid assay, renal function, plasma glucose, uric acid and blood amylase were also observed to evaluate side effect of long term HAART.
**Results:** After 6 years of HAART, no obvious change could be seen in Haemophilia A/AIDS patients' mean consultation times, mean bleeding times, mean VIII factor transfusion times and mean amount of VIII factor transfusion ($P>0.05$), only one case exhib-